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TORREYA

June, 1918

Vol. 18 No. 6

THE FLORA OF INDIAN LADDER AND VICINITY: TOGETHER WITH DESCRIPTIVE NOTES ON THE SCENERY

By Stewart H. Burnham

"Fair Helderberg,
"O mountain fair, blue line against the sky!
Thy wooded steeps, thy cool secluded trails,
Thy dells, thy caves, and laughing waterfalls,
All rainbow-haloed in the mellow light—
How fondly turn thy loyal sons to thee,
With pure delight to greet thy sylvan joys!"

May 12, 1906. We left Albany, at noon, and went to Indian Ladder in the Helderberg mountains, Albany county, fourteen miles due west of the city. We got off the train at Meadowdale (formerly known as Guilderland) on the Susquehanna division of the Delaware & Hudson railroad. It was a splendid afternoon, in spite of the threatening shower, and inspiring scenery.

The walk from Meadowdale to the top of the cliffs, where the wagon road passes over the site of the famous Indian Ladder, is about two miles; if one takes the private road half a mile from the village, beyond a white house and a red barn. Soon the ascent of the long hill begins, the road skirting the base of the western cliffs, and overlooking the large amphitheater-like valley in which a stream flows, formed by the confluence of two or three streams from above. Two of the streams leap from the cliffs in pretty waterfalls, about 100 feet in height, and a large stream also issues from the base of the cliff along the Bear path. The valley is well wooded with deciduous trees, and the eastern side has a fine growth of canoe birch, *Betula papy-*

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rifera Marsh., now putting forth the noticeable yellow-green foliage. Most of the time was spent in traversing the trail at the base of the cliffs. After venturing a short distance along the trail, on the same level as the roadbed, we soon came to the end at a dizzy height. Returning to the road, we took the trail along the base of the cliffs, from which in several places one may climb to upper ledges and explore cavernous recesses in the rocks. Along the path one can enter Giant's Castle, a dark cavernous fissure; and walk several steps nearly erect. Nearby is a cave above the trail, reached only by climbing an old tree trunk placed against the cliff, and entering the cavern head foremost. When one makes their exit they must come out feet foremost and clamber down the trunk to the path.

Soon after leaving this spot, we passed fifteen students of geology from Williams College, accompanied by Prof. H. F. Cleland, on their fourth annual outing to the Helderbergs. They entered the mountains at New Salem, near where the Bear path begins, skirting Countryman Hill, 1,694 feet in height. This section for many years has been a Mecca to geological students; and the name Helderberg is a familiar one in geological literature.

The Mine Lot Fall is the prettiest of the waterfalls, the water to-day falling near two banks of snow. Along the trail, the lower side of which takes on somewhat the character of a talus slope, the rocks are covered with lichens, mosses and ferns. Beyond the Mine Lot we rested before climbing the wooden ladder in Craig Court, a square embrasure in the cliffs. We went a short distance along the brow of the cliffs east, to the promontory where the rocks form an old man's face; but the coming shower turned us back, and we hastily retraced our steps along the cliffs to the Indian Ladder road.

The view from the lookouts along the brow of the cliff are magnificent, over the Taughannock-like amphitheater at our feet, and one can see for miles into the northland, although to-day the clouds are dark and lowering. Not being aware of such a picturesque accessible spot near Albany, one feels that they will be repaid to frequently visit this mountain retreat.

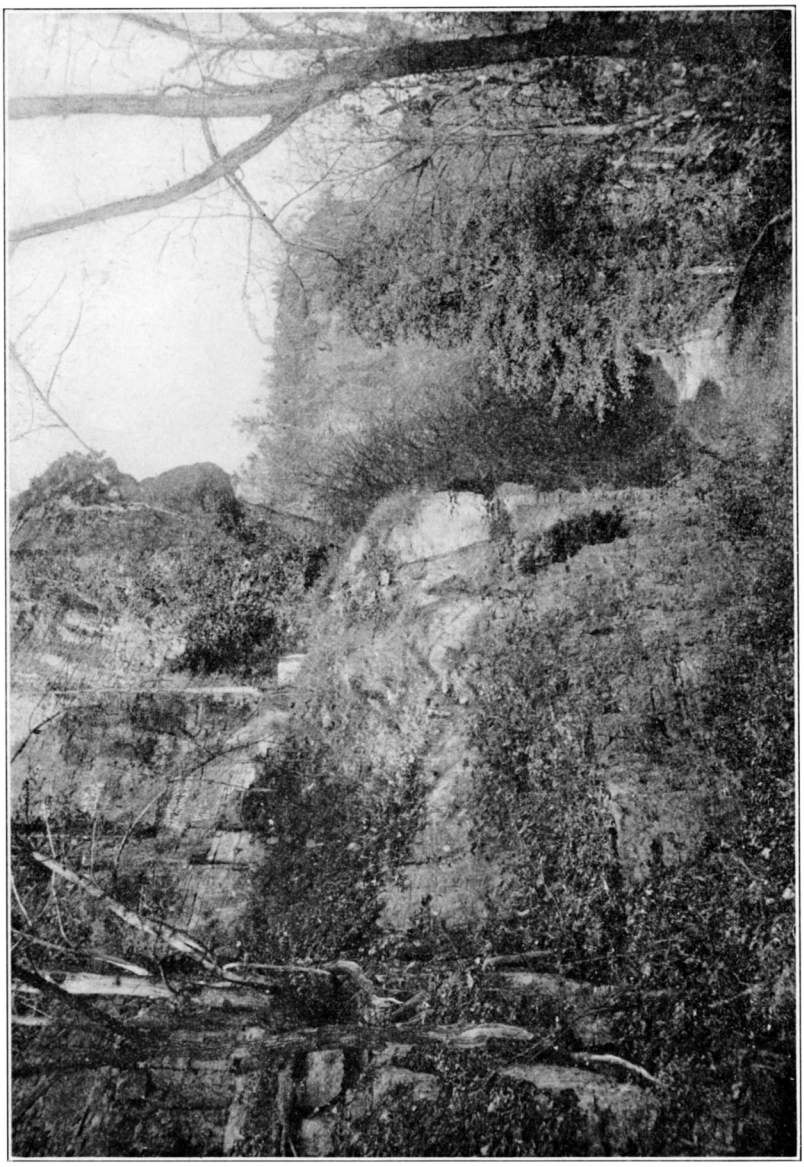


FIG. 1. The battlements of the Dome and Indian Ladder Road.

"The Indian ladder took the name from the fact that the Indians of Schoharie valley, upon their trading trips to this section of the Hudson, felled a tree against the face of the cliff, which opposed their trail, and used it as their ladder."

The word Helderberg signifies "clear mountain." The cliffs rise about 800 feet above the valley, or 1,200 feet above sea level. The geological formation as given on the New York State geological map is

Helderberg limestones
- Water-lime beds
- Cliff
 - Tentaculites (Manlius), shabby limestone
 - Pentamerus (Coeymans), massive limestone
- Shaly limestone (at the top)
- Becraft limestone (half a mile back)

The following plants were seen or collected, on the cliffs, along their base and at the top. *Collema tenax* (Sw.) Ach. and *Leptogium lacerum* (Retz.) S. F. Gray on moist rocks among mosses in the spray of Mine Lot Fall; *Parmelia caperata* (L.) Ach. on *Betula lutea;* and *Urceolaria scruposa* (Schreb.) Ach. on rocks.

Porella platyphylla (L.) Lindb.

Anomodon rostratus (Hedw.) Schimp. and *Anomodon viticulosus* (L.) Hook. & Tayl., sides of the cliffs; *Mnium cuspidatum* (L.) Leyss and *Timmia cucullata* Mx. on soil at base of cliffs.

Cryptogramma Stelleri (Gmel.) Prantl in mosses along the face of the cliffs.

Juniperus sibirica Burgsd.; *Trillium erectum* L.; *Asarum canadense* L.; *Cerastium arvense* L., a very showy plant with large white flowers, growing in the clefts of the rocks along the upper part of the carriage road; *Aquilegia canadensis* L.; *Arabis lyrata* L., the flowers fragrant; *Dentaria laciniata* L.; *Dentaria maxima* Nutt.; early saxifrage, *Micranthes virginiensis* (Mx.) Small; *Waldsteinia fragarioides* (Mx.) Tratt. and *Lonicera canadensis* Marsh.

July 22, 1906. We left the city on the morning train. It was

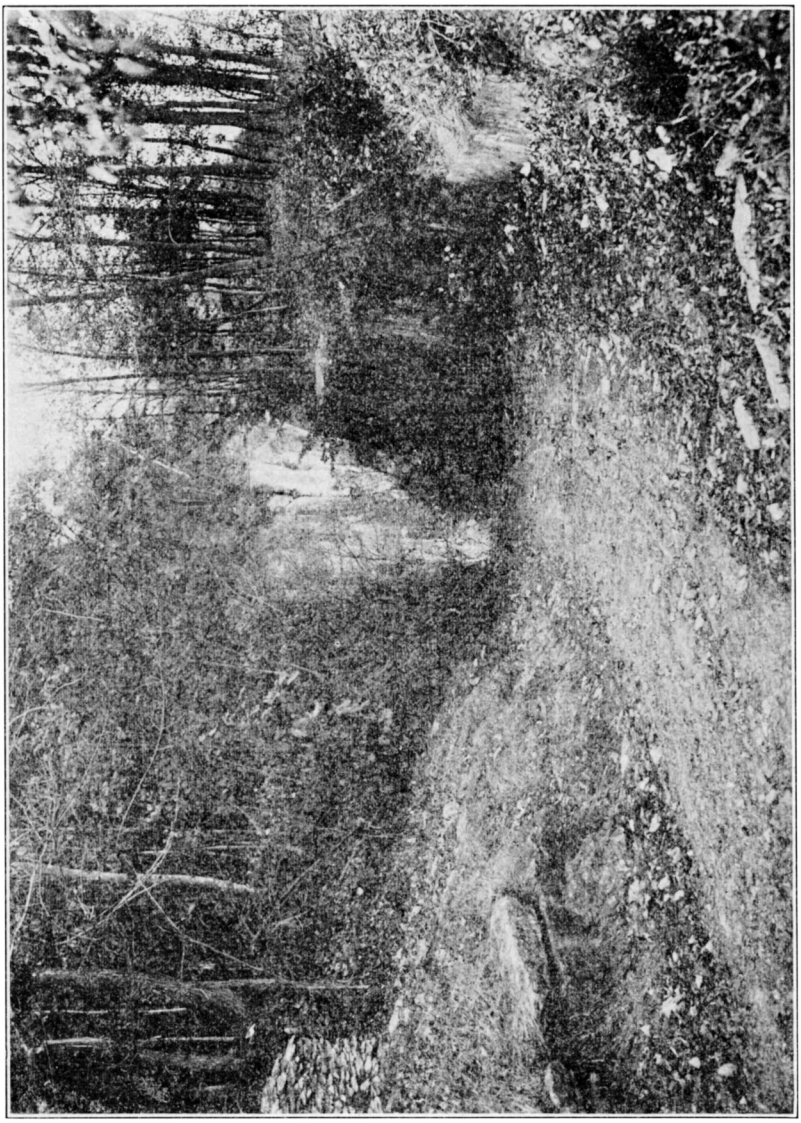


FIG. 2. The Summit of Indian Ladder Road.

very warm climbing the Indian Ladder road, both for pedestrians and horses. Below the road at the parting of the two rocky diverging gorges in the main amphitheater is a little open spot known as the "'Tory Hook' or Plat." Here Black creek, filled with water-worn boulders, descends through "the damp, thick woods of oak, hickory, . . . elm, basswood (linden), butternut, ash, beech and birch with a white pine and hemlock . . . give color to the scenery, heightened by the green graceful frondage of the scarlet-fruited sumac, the trailing cordage of the wild grape-vines and numberless other wild plants." The old Indian trail led up this valley; and where the precipice does not exceed 20 feet in height stood the tree trunk—the old ladder, which was in daily use as late as 1820. The cliff has been blasted away for the roadbed. Overhanging the road at this point is "The Dome," and the path beneath leads to a semicircular cavity in the cliff known as the Tory House.

Following the Bear path along the base of the cliff, one comes to a large spring of ice-cold water issuing from a dark opening. The opening is about 3 feet high by 6 to 8 feet wide, narrowing inward. The temperature of the air of this spring remains about 54°, the year round. Giant's Castle is the next object of interest and then Small or "Dry Fall," falling unbroken 80 feet and issuing from the talus in two cascades and then to disappear again for some distance down the gorge. There was no water in the waterfall to-day.

Further east, the overhanging cliffs are 126 feet in height; and here is the "Big," "Mine Lot," or "Indian Ladder" Fall, falling 116 feet. There is considerable water to-day; "a silvery rope of spray, with a whispering rush, sweeping before it damp, chilly eddies of fugitive air, that sways the watery cable to and fro." But as the water strikes the huge rocks at the base, it is turned to spray and from time to time wafted by the slight breeze stirring. One of the species of *Vaucheria*, in large felt-like masses, grows here and in the cold spring. There are several mosses here; but only *Amblystegium filicinum* (L.) DeNot. and *Mnium punctatum* L. with stolons were collected.

Back of the Mine Lot Fall is what is known as the "Red Paint

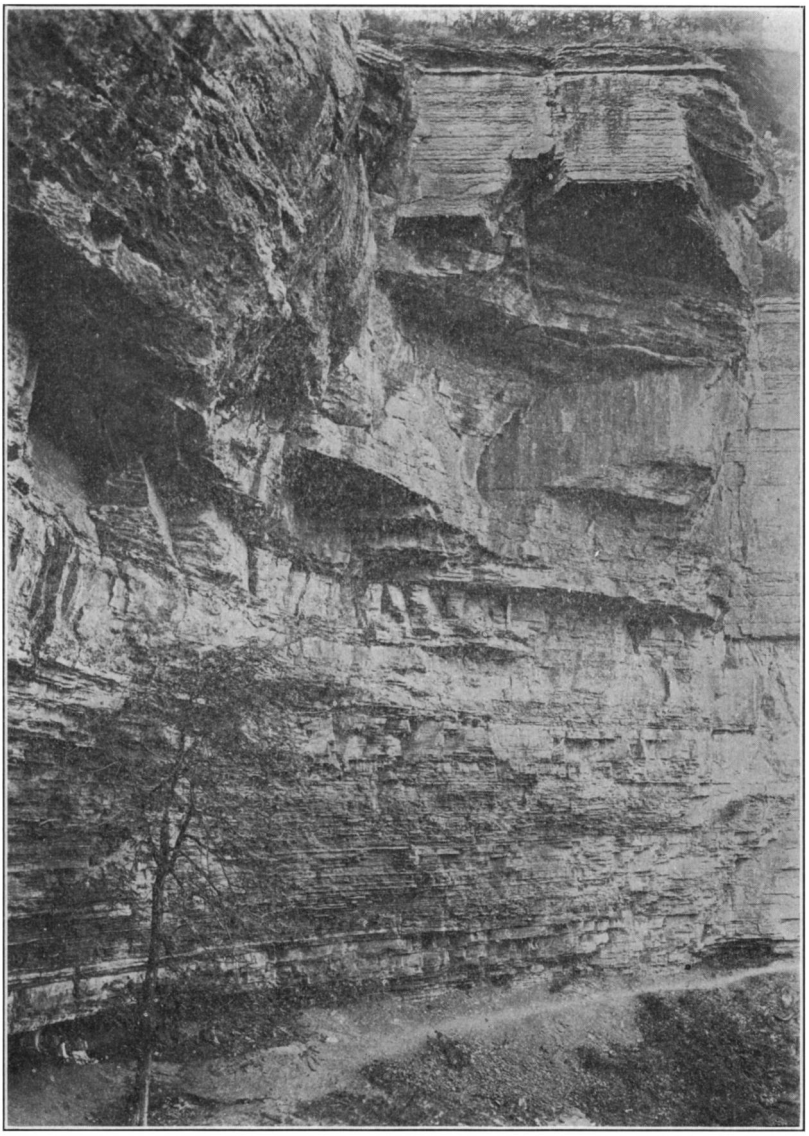


FIG. 3. The bear path near Mine Lot Fall and the Red Paint Mine at the base of the cliff.

Mine," a low horizontal cavity, from 4 to 6 feet high, 50 to 60 feet long and 15 feet deep. There is a vein of iron pyrites, decomposing into yellow oxid of iron and gypsum; also white copperas and acicular crystals of Epsom salts. Further eastward we climbed the ladder to the top of the cliffs and lunched and rested on Hanging or Table Rock, at the brow of Mine Lot Fall. Here is a grand view of a "widespread level country, a true basin of the Hudson and the Mohawk—a deep valley more than sixty miles in width, bounded by distant mountain chains. . . . You can see nearest, the deep savage valley, with shades predominating, mountain-walled; checkered fields and woods beyond in vast prospective"; distant farms and villages; "last, the blue, ragged outline of the northern granite mountains. . . ."

Later in the afternoon we wandered eastward through the woods, and from the ruined tower on the edge of the cliff, which Verplanck Colvin in 1869 likens to an old feudal watch-tower, a fine view of the eastern amphitheater was enjoyed. This tower was built by an Albanian many years ago and formerly had an outside platform; but is now being slowly destroyed by vandals. Continuing eastward and crossing the stream which flows down through Glen Doon, we came to the summer cottages on East Cliff. If the air is right one can converse across the gulf between this cliff and the Indian Ladder road, a distance of over half a mile. At other times one can hear speech; but cannot converse. There are many fossils in the rocks here, but the most abundant of the Upper Silurian fossils is the shell *Pentamerus galeatus.*

Late in the afternoon we descended the ravine of Glen Doon, also known as Mosquito Hollow, a stream bed of boulders, which half a mile below let us out into pastures of goldenrod. Along the upper part of the ravine the immense rocks are covered with ferns and mosses, but near the lowlands is a stratum of Hudson River shale, and we found a little standing water. There is much decayed wood in the ravine, and it is probably a good place for fungi in a favorable season.

Many berries were ripe: wild gooseberries, high-bush blackberries, red raspberries, running dewberries, purple-flowering

raspberries, strawberries, two kinds of shadberries and choke cherries.

The following plants were seen or collected: *Cantharellus cibarius* Fr.; *Cantharellus floccosus* Schw.; *Exidiopsis alba* C. G. Lloyd on fallen red maple trunk; *Flammula expansa* Pk. on fallen red maple trunk, type station (in part); *Ganoderma Tsugae* Murrill on hemlock and *Tricholoma album* (Schaeff.) Quel.

Cryptogramma Stelleri (Gmel.) Prantl in Glen Doon; *Dryopteris marginalis* (L.) A. Gray; and *Filix bulbifera* (L.) Underw., very graceful and abundant, usually reclining from crevices in the cliffs; but under Mine Lot the fronds erect themselves to get the required light.

Hystrix Hystrix (L.) Millsp.; *Quercus coccinea* Wang.; *Rubus odoratus* L., a fine thicket and a plant well worthy for ornamental cultivation; *Rosa blanda* Ait., with a *Phragmidium* rust attacking the fruit and stems; *Amelanchier spicata* (Lam.) C. Koch, with the *Roestelia* stage of a *Gymnosporangium* rust attacking the fruit; *Staphylea trifolia* L.; *Cornus rugosa* Lam. (*C. circinata* L'Her.), two forms, one with narrower leaves than usual; red bearberry, *Uva-Ursi Uva-Ursi* (L.) Britton, abundant on East Cliff; *Lonicera dioica* L., conspicuous in fruit; *Viburnum pubescens* (Ait.) Pursh; and *Campanula rotundifolia* L. at Hanging Rock, the flowers small, which is probably due to the lateness of the season.

Sept. 29, 1906. We left Albany on the noon train. Not many of the leaves were turned; dogwood and sumac show some scarlet color and the white birches are beginning to turn yellow.

Very many fine views were had from the cliffs into the amphitheater of wooded ravines. During the early afternoon two katydids were heard, when on the way up the road; but they had become fairly abundant when we descended, in the late afternoon.

A bright little boy, by the name of Hallenbeck, from the farmhouse above Indian Ladder, acted as guide to Helmus Crack, half a mile west of the wagon road. This is a joint plane fissure in the cliff, and is also known as "The Crevice." One is obliged to turn sideways at the upper end in order to slip down through



FIG. 4. The Mine Lot Fall in early spring.

the rocks and it is certainly a fat man's misery. About an eighth of a mile beyond the Crack is Sutphen's Cave or Hailes's Cavern; "2½ miles, 1885, explored by T. C. Hailes, E. C. Armstrong and F. H. Maguire," according to the legend on the rock above the entrance. A certain fellow by the name of Dan Lynch states the distance to be 10 miles in red paint, and he probably thought it was, if he went far. We only went a few steps beyond the low entrance, over a pile of loose rocks, but one has to bend almost double and it is wet, cold and clayey. It is but an old stream bed, and a great abundance of water flows out in the spring of the year and down to the valley below over the immense boulders, which have fallen from the cliffs 105 feet above. The cliff is curiously fissured and there are three immense square openings—"Proscenium Arches"—in the face of the cliff, extending back of the original cliff. The openings are like huge doors, the smaller opening being inmost and contains the mouth of the cavern. The well-beaten trail ends apparently a short distance beyond the cave; however, it probably continues on to near Altamont.

The site of the old lime kiln at the top of the cliff near Small Fall was discovered.

The following plants were observed or collected: *Daedalea confragosa* (Bolt.) Pers. on yellow birch logs and beech limbs.

Pannaria lanuginosa (Ach.) Koerb.

Amblystegium varium (Hedw.) Lindb.; *Brachythecium rivulare* B. & S. and *Eurhynchium rusciforme* (Neck.) Milde.

Dryopteris marginalis (L.) A. Gray, a form with pinnae scarcely dentate; and *Polypodium vulgare* L.

Vitis bicolor LeConte with sweet fruit; and *Symphoricarpos pauciflorus* (Robbins) Britton in fruit.

October 27, 1906. To Indian Ladder on the noon train. I followed the creek up from the wagon road, up the rugged ravine of Mine Lot, with many a scramble over fallen logs and around immense boulders. The conspicuous bare spot on the east bank, at the lower end of the gulf, is composed of black crumbling shaly rock mixed with sand strata. Part way up the glen, a fine view of the silvery thread of the waterfall, through the

forest, is to be seen. It was some time before I could make it seem possible that the square battlements of Table Rock and other prominences were not a portion of man's handiwork; verily, they suggest the parapets of the castle of some feudal king. Did not the Indians have a name for Mine Lot Fall? The people who follow the beaten trail along the base of the cliffs lose much of the beauty of the spot.

One finds many robin and other bird nests in the low-browsed and branched elm bushes below Tory Hook. The woods were aflame with the witch-hazel. Returned through Glen Doon, where, lower down, it reminds one of the Adirondack woods. The sharp-lobed hepatica is very abundant here, and often with unblotched leaves.

The following plants found or observed: *Cantharellus aurantiacus* (Wulf.) Fr.; *Chlorosplenium aeruginosum* (Oeder) DeNot. on old logs; *Collybia velutipes* (Curt.) Quel. on elm logs; *Fomes fomentarius* (L.) Gill. on beech and birch; *Fomes pinicola* (Sw.) Cke. on birch (!) logs; *Geaster saccatus* Fr.; *Helotium citrinum* (Hedw.) Fr. on old logs; *Hypholoma perplexum* Pk.; *Lycoperdon Wrightii* B. & C.; *Marasmius siccus* (Schw.) Fr.; *Pholiota Johnsoniana* Pk.; *Pleurotus ostreatus* (Jacq.) Quel. on maple stumps; *Pleurotus porrigens* (Pers.) Quel. on hemlock logs and stumps; *Pleurotus ulmarius* (Bull.) Quel. on elm; *Pluteus cervinus* (Schaeff.) Quel. on old stumps; *Polyporus brumalis* (Pers.) Fr. on elm and other logs; *Polyporus caesius* (Schrad.) Fr. on birch and other wood; *Polyporus chioneus* Fr. on birch limbs; *Polyporus resinosus* (Schrad.) Fr. on basswood and other logs; *Poria radiculosa* (Pk.) Sacc. on old logs; *Poria subacida* (Pk.) Sacc. on old logs and *Tricholoma personatum* (Fr.) Quel.

Peltigera aphthosa (L.) Willd. and *Peltigera canina* (L.) Hoffm.

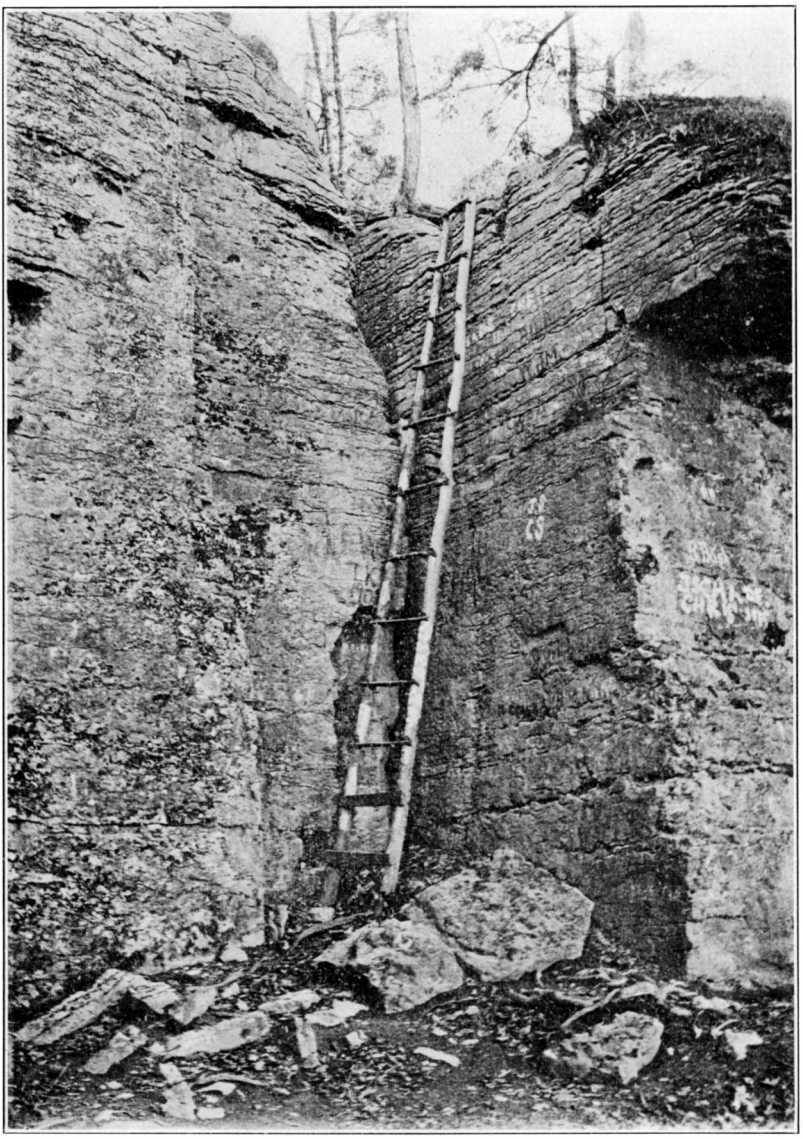
Amblystegium orthocladon (Bv.) P. Kindb., var.; *Dicranum flagellare* Hedw.; *Entodon cladorrhizans* (Hedw.) C.M.; *Hypnum Haldanianum* Grev. on decaying logs; *Hypnum tenuirostris* (B. & S.) Broth.; *Neckera gracilis* (James) Kindb., at the base of Mine Lot Fall, found there about 1869 by Verplanck Colvin, who reported it under the name *Homalia trichomanoides,*

Rhytidium rugosum (L.) Kindb., brow of the cliffs, the yellow green loose mats very handsome; and *Thuidium delicatulum* (L.) Mitt.

Adiantum pedatum L.; *Asplenium Trichomanes* L.; *Camptosorus rhizophyllus* (L.) Link, not rare at the base of Mine Lot and in Glen Doon; *Dryopteris intermedia* (Muhl.) A. Gray; and *Polystichum acrostichoides* (Mx.) Schott., only found near the lowlands in clayey soil and entirely disappearing a short distance up the glens. I was not aware before of its avoidance of calcareous soils.

March 23, 1907. In the afternoon to the Indian Ladder country, finding the roads quite dry and dusty. Many robins, a blue jay and other birds. Where the road begins the steep ascent of the hill, we left it for a rough climb around the hillside through the woods to the stream from Hailes's Cavern. Evergreen ferns, principally *Dryopteris marginalis* (L.) A. Gray and its var. *elegans* (J. Robinson) Carhart. The walking was not always sure, on account of the frozen soil beneath the leaf mould. The stream was full banked and very musical and might be called a mountain cascade, as the drop from the cavern's mouth is very abrupt and over a rocky bed. The cavern's mouth to-day was two thirds filled with water. Rather than to descend the steep mountain side, we stamped several steps up through a bank of almost perpendicular snow to the path above, and were obliged to do the same thing through Helmus Crack. We could see Mt. Equinox and Bear Mountain in Vermont, 50 miles to the northeast, from the brow of the cliffs.

Both Small and Mine Lot waterfalls fall into ice cones. The cone of the former fall reached nearly to the top of the cliff, and of the latter part way, but was of more gigantic proportions. Huge icicles, 25 to 30 feet long, hang from projecting rocks. These ice cones and banks of snow completely obstructed the path along the base of the cliffs. On East Cliff we visited the new cottage, on the brow above Fallen Rocks, enclosed and nearing completion. A splendid site, for here the high water stream falls about 125 feet to the rocks below, a magnificent waterfall of ethereal whiteness—the Bridal Veil of this picturesque region.



F.G. 5. Craig Court.

We took the short-cut trail from the flagpole on East Cliff, saving about 1½ miles. It descends abruptly through a clearing into lower Glen Doon ravine. A piece of calcite was picked up along the trail, and along the upper cliffs *Asplenium Ruta-muraria* L. was found.

The following plants were observed or collected: The hickory louse gall, *Phylloxera Caryaecaulis* Fitch, abundant on branches of *Hicoria ovata* at the foot of Indian Ladder road.

Dichaena faginea (Pers.) Fr. on living *Fagus grandifolia; Polystictus conchifer* (Schw.) on fallen elm limbs; *Polystictus versicolor* (L.) Fr.; and *Tremella aurantia* Schw. on hemlock logs.

Biatora vernalis (L.) Fr., on the ground, determined by Dr. Bruce Fink; *Lecanora pallida cancriformis* (Hoffm.) Tuck. on wood; *Parmelia tiliacea* (Hoffm.) Ach. on trunks of yellow birch; *Placodium elegans* (Link) Ach. on rocks in the stream at the mouth of Hailes's Cavern.

Brachythecium salebrosum (Hoffm.) B. & S.; *Eurhynchium strigosum* (Hoffm.) B. & S.; and *Thelia asprella* (Schimp.) Sulliv. at base of living trees.

May 5, 1907. We left Albany on a morning train. Visited the Tory House just north of the high overhanging cliff of the Dome near the upper end of the wagon road. During the Revolutionary War it is said to have been used as a retreat by the Indians and tories, and the name was given to it because a noted tory by the name of Jacob Salisbury was captured there. It is perhaps 25 to 30 feet in diameter, and although there is no perceptible opening in the rocks forming the roof of the recess, still smoke from a fire will find an egress somewhere. Visited Helmus Crack and Hailes's Cavern; then along the Bear path. Both of the waterfalls still beautiful, but there was an arch of ice still at the foot of Mine Lot Fall. The canoe birches seen from Hanging Rock were fine, with bark as white as chalk. A clear day, and we could see Albany, Schenectady, Mechanicsville, Ballston and Saratoga Springs; Mt. Equinox and Bear Mountain in Vermont; Mt. Antonio near Luzerne and the mountains about the southern end of Lake George. Late in the afternoon we descended from East Cliff by the short-cut trail.

The following plants were seen or collected: *Biatorella simplex* (Dav.) Br. & Rost. (*Lecanora privigna* (Ach.) Nyl.) on loose calcareous stones on East Cliff, determined by Dr. Fink, deposited in the State Herbarium as new to the State; and the rare lichen, *Solorina saccata* (L.) Ach. along the path at the foot of the ladder in Craig Court and along the short-cut trail.

Spring is even backward here but the ferns were starting. *Erythronium americanum* Ker.; *Hepatica acutiloba* DC. very abundant in woods at base of East Cliff; *Thalictrum dioicum* L.; *Sanguinaria canadensis* L.; *Amelanchier canadensis* (L.) Medic.; *Epigaea repens* L. grows in an open pasture back from the cliffs; and *Pedicularis canadensis* L. with the young foliage purplish.

July 13, 1907. We left the city at 2.15, which gave us only time to go to the East Cliff and return by the fields north of Fallen Rocks. Hermit thrushes in the hemlock woods. Part of the climb was up an old slide from the cliffs, and the purple cliff-brake, *Pellaea atropurpurea* (L.) Link, was found quite abundantly, but often out of reach, on the face of the cliffs.

The following plants were collected or seen: *Poria vaporaria* (Pers.) Fr. on under side of poplar logs.

Pannaria nigra (Ach.) Nyl. on loose stones, determined by Dr. Fink.

Dicranum flagellare Hedw. in dense cushions on loose rocky soil; and *Hypnum curvifolium* Hedw. on a rock.

Galeorchis spectabilis (L.) Rydb.; *Limnorchis huronensis* (Nutt.) Rydb., one plant; *Parietaria pennsylvanica* Muhl.; *Atragene americana* Sims, not very rare; *Menispermum canadense* L. on fences and *Vicia angustifolia* L., grain fields in the valley; *Acer spicatum* Lam.; *Viola renifolia* A. Gray; *Washingtonia longistylis* (Torr.) Britton, somewhat pubescent, the fruit tastes like anise, found along hedgerows in the valley; *Pyrola secunda* L.; *Cynoglossum boreale* Fernald, two fruiting plants at top of the cliff; *Lonicera dioica* L., a form with leaves not connate; and *Lonicera hirsuta* Eaton.

(To be continued)